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The Rotatoria of Queensland, Australia

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Abstract

THIS paper lists 47 species of the Rotatoria collected from fresh water habitats in Queensland, Australia. Of these, 36 of the species have also been found in New Zealand. Morphological details of the 11 species at present unknown in New Zealand are given in a Reference List.

INTRODUCTION

THE rotifers listed in this paper were nearly all collected by Mr I. A. E. Bayly, of the Department of Zoology, University of Queensland, during an investigation of the zooplankton of the State, made with the assistance of a Commonwealth Research Grant to the University of Queensland.

I have to thank Mr Bayly for the opportunity to examine this interesting material, and I would also thank Mr H. A. Nix for material from the Gracemere Lagoon, and Mr I. Straughan for the collections from the Corella and Leichardt dams.

All the species found are included in the Faunal List, and in addition the 11 species not so far found in New Zaland are described in a Reference List in the later part of this paper. The 21 locations from which collections were made are listed separately and referred to in the paper by the marginal letter against each habitat. For ease of reference the Reference List is in alphabetical order of genera and species, and short titles only have been given to the literature cited. Full titles and a complete synonymy are obtainable from Wisniewski (1954), or Voigt (1957).

THE RELATION BETWEEN THE QUEENSLAND AND NEW ZEALAND ROTIFER FAUNA

An examination of the Faunal List shows that the Queensland rotifer fauna is, within the limits of the collections, very similar to that of New Zealand. What is of more importance is that few variations were found in the species from the two countries. There is a marked absence in the Queensland waters of many species common in New Zealand waters belonging to the genera *Lepadella, Notommata,* and *Colurella* to mention only three. No new species were found in the Queensland water.

* Editor's Note: Mr C. R. Russell died on August 31, 1961, after this paper was in the press.

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Ecological details of the Queensland habitats are not available, but the Australian meteorological statistics indicate that the air temperature of Queensland is on the average considerably higher than that of the greater portion of New Zealand. The 11 species not found in New Zealand are mostly sub-tropical forms, and have been found in Ghana, Russell (1956), and the South Sea Islands (Russell 1957).

Although the life cycle of many rotifers is influenced by the temperature and pH of the water these animals appear to be far more tolerant of changes in temperature than generally thought probable. Species of the genera *Filinia* and *Keratella* found in Queensland and New Zealand, have also been found in the Antarctic (Russell, 1959).

This present study indicates that the rotifer fauna of Queensland is closely related to that of New Zealand, and warrants further investigation of Australian forms.

Habitats

A. Enoggera Reservoir. Coll. 1/5/59.
B. Gold Creek Reservoir. Coll. 14/10/59.
C. Lake Manchester. Coll. 15/8/59.
D. Pools at Brisbane Golf Course. Coll. 1/5/59.
E. Pools in Sherwood District. Coll. 1/5/59.
F. Somerset Dam. Coll. 16/8/59.
G. Roadside pools near Gold Creek Reservoir. Coll. 1/5/59.
H. Bright View Weir, near Lowood. Coll. 11/10/59.
I. Pools near Dunwich. Coll. 3/10/59.
J. Sir Leslie Wilson Weir, near Galton. Coll. 11/10/59.
K. Lake Clarendon. Coll. 11/10/59.
L. Cooby Reservoir. Coll. 11/10/59.
M. Brown Lagoon, Stradbroke Island. Coll. 3/10/59.
N. Atkinson's Lagoon. Coll. 11/10/59.
O. Gracemere Lagoon, Ayr.
P. Corella Dam, Mary Kathleen.
Q. Leichardt Dam, Mt Isa.
R. Coalstoun Lakes. Biggenden.
S. Lake Cootharaba, Noosa.
T. Lake Cooloolah, Noosa.
U. Water Hole, near Biggenden.

No rotifers were found in habitats D., E. and U.

Faunal List

Asplanchna brightwelli Gosse 1850. K. O. P. R.
Asplanchna priodonta Gosse 1850. A. B. L.
Brachionus calyciflorus Pallas 1766. F. J. K. O. R.
Brachionus caudatus Barrois and Daday 1894. K.
Brachionus falcatus Zachrias 1898. A. B. K. L. O.
Brachionus plicatilis Muller 1786. O.
Brachionus quadridentatus Hermann 1783. K. N. O.
Brachionus rubens Ehrenberg 1838. N. O. P.
Colurella obtusa (Gosse) 1886. G.
Conochiloides natans (Seligo) 1900. C. E.
Conochiloides hippocrepis (Schrank) 1830. ? A. F.
Euchlanis dilitata Ehrenberg 1832. H. I. J. L. O.
Filinia longiseta (Ehrenberg) 1834. K.
Gastropus hyptopus (Ehrenberg) 1838. F.

Hexarthra fennica (Levander) 1892. ? R. S.
Hexarthra mira (Hudson) 1871. K.
Keratella cochlearis var. *hispida* (Lauterborn) 1898. A. B. F.
Keratella javana Hauer 1937. I. K.
Keratella valga (Ehrenberg) 1834. R.
Keratella valga form *tropica* (Apstein) 1907. A. B. F. K.
Keratella serrulata (Ehrenberg) 1838. R.
Lecane arcuata (Bryce) 1891. I.
Lecane bulla (Gosse) 1851. I.
Lecane crenata (Harring) 1913. I.
Lecane hamata (Stokes) 1896. A.
Lecane luna (Muller) 1776. G.
Lecane nana (Murray) 1913. G.
Lecane papuana (Murray) 1913. P. Q.
Lecane ploenensis (Voigt) 1902. I.
Lecane styrax (Harring and Myers) 1926. O.
Lecane ungulata (Gosse) 1887. O. Q.
Monommata longiseta (Muller) 1786. I. J.
Mytilina ventralis var. *macracantha* (Gosse) 1886. H.
Polyarthra vulgaris Carlin 1943. R.
Polyarthra longiremis Carlin 1943. F.
Pompholyx complanta Gosse 1851. F.
? *Sinantherina socialis* (Linnaeus) 1758. O.
Synchaeta pectinata Ehrenberg 1832. C.
Testudinella insinuata Hauer 1938. T.
Testudinella patina (Hermann) 1783. K. O.
Tetramastix opoliensis (Zachrias) 1898. B.
Trichocerca capucina (Wierzejski and Zachrias) 1893. B.
Trichocerca dixon-nuttalli (Jennings) 1902. O. R.
Trichocerca rattus (Muller) 1776. C.
Trichocerca similas (Wierzejski) 1893. F.
Trichocerca weberi (Jennings) 1903. A. B.
Tripleuchlanis plicata (Levander) 1894. G.

REFERENCE LIST

The rotifers described in this list have not, so far, been found in New Zealand. The letter " M " terminating a description signifies that a microscope slide of the animal has been deposited in the Canterbury Museum's collection of rotifers.

Genus BRACHIONUS Pallas, 1766.

Brachionus falcatus Zachrias 1898. Untersuchungen uber des Plankton der Teichgewasser. Forsch. Biol. Stat. Plon. 6: 133.

LOCALITY. A. B. K. L. O. Total length from all habitats 350–380 microns. Length of posterior spines 110–130 microns. Length of anterior spines: laterals, 10–14 microns; intermediates, 90–120 microns; medians, 10–14 microns. The posterior spines are little converging. The lorica is slightly stippled, and in some specimens the mental margin is slightly lobed. The specimens are similar to those recorded from Ghana, Russell (1956), page 139. M.

Genus KERATELLA Bory de St. Vincent 1822

Keratella valga form **tropica** (Apstein) 1907.

1907. *Anuraea valga* form *tropica* Apstein. Das Plankton im Colombo-See euf Ceylon. Zool. Jahrb. Syst. 25: 210.

LOCALITY. A. B. F. K. Total length, 176–180 microns. Length of anterior spines: laterals, 20–24 microns; intermediates, 18–22 microns; medians, 30–34 microns. Width of

body, 58–62 microns. Length of posterior spines: left, 10–14 microns; right, 58–64 microns. The dorsal pattern is well developed. M.

Genus Lecane Nitzsch 1827

Lecane nana (Murray) 1913.

1913. *Cathypna nana* Murray. Jour. Roy. Micr. Soc. p. 353.

Locality. G. Length of body, 80 microns. Length of toes, 28 microns. This species appears to be tolerant of both warm and cold waters. M.

Lecane ploenensis (Voigt) 1902.

1902. *Distyla ploenensis* Voigt. Zool. Anz. 25: 679.

Locality. I. Total length, 156–160 microns. Length of dorsal plate, 100–110 microns. Length of ventral plate, 110–116 microns. Width of dorsal plate, 74–78 microns. Width of ventral plate, 64–68 microns. Width of anterior points, 50–56 microns. Length of toes, 40–44 microns. The markings on the plates are obscure. M.

Lecane ungulata (Gosse) 1887.

1887. *Cathypna ungulata* Gosse. Jour. Roy. Soc. Micr. Soc. p. 361.

Locality. O. Q. Length of ventral plate, 250 microns. Length of dorsal plate, 200 microns. Width of dorsal and ventral plates, 200 microns. Length of toes and claws, 60 microns. Length of claws, 24 microns. This appears to be a rare species in the Pacific area. M.

Genus Mytilina Bory de St. Vincent

Mytilina ventralis form **macracantha** (Gosse) 1886.

1886. *Salpina macracantha* Gosse. The Rotifera 2: 84.

Locality. H. Total length, 240 microns. Length of toes, 52 microns. Length of dorsal spine, 40 microns. Length of ventral posterior spines, 40 microns. Except for the variation in the size of the body, and the spines, the specimens are typical.

Genus Polyarthra Ehrenberg 1834.

Polyarthra longiremis Carlin 1943. Die Plankton-Rotatorien des Notalastrom. Lund. Univ. Limn. Inst. No. 5, p. 88.

Locality. F. Typical specimens having a total length of from 150–200 microns. M.

Genus Testudinella Bory de St. Vincent 1826

Testudinella insinuata Hauer 1938. Archiv. f. Hydro-biol, Sup 15. p. 580.

Locality. T. Length of body, 90 microns. Width of body, 80 microns. The anterior dorsal section is elevated more than in the type, otherwise the specimens are typical. M.

Genus Tetramastix Zachrias 1898.

Tetramastix opoliensis Zachrias 1898. Forsch. Biol. Stat. Plon. 6: 132.

Locality. B. Total length, 480 microns. Length of body, 120 microns. Anterior appendages, 150 microns and 200 microns. Posterior appendages, 24 microns and 160 microns. Except that the specimens are smaller and there are variations in the length of the appendages the specimens are typical. M.

Genus Trichocerca Lamarck 1801

Trichocerca capucina (Wierznejski and Zachrias) 1893.

1893. *Mastigocerca capucina* Wierznejski and Zachrias. Zeit. Wiss. Zool. 56: 242.

Locality. B. Total length, 210 microns. Length of body, 130 microns. Length of toes, 80 microns. Sub-toe approximately 20 microns in length. The anterior triangular projection is robust. M.

Genus TRIPLEUCHLANIS Myers 1930

Tripleuchlanis plicata (Levander) 1894.

1894. *Euchlanis plicata* Levander. Acta. Soc. Fenn. Helinsfors, vol. 12. No. 3, p. 48.

LOCALITY. G. Length of body, 110 microns. Width of body, 80 microns. Depth of body, 70 microns. Length of toes, 32 microns. This species is generally considered to be a saline water form, but the present habitat was a freshwater pool, and it was found in Ghana in a fresh water lake, Russell (1956).

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